

In the Claims:

Claims 1 to 15 (Canceled).

1 **16.** (New) A combination of an aircraft body and an air
2 discharge valve for discharging air under an interior
3 pressure (P_i) from the interior of said aircraft body (14)
4 to an exterior atmosphere having an exterior pressure (P_a),
5 said combination comprising said aircraft body having an
6 outer skin and a configuration defining a flight direction
7 (FD) and said air discharge valve, an opening in said outer
8 skin, said air discharge valve being installed in said
9 opening, said air discharge valve comprising a first
10 pivotal valve flap (1) having a first wedge-shaped
11 sectional configuration with a first rounded leading edge
12 (8) facing in said flight direction (FD) and a first
13 trailing edge (8A) facing opposite said flight direction,
14 a first journal (2) for pivoting said first valve flap (1)
15 to said aircraft body (14) at a point closer to said first
16 trailing edge (8A) than to said first rounded leading edge
17 (8), a second pivotal valve flap (3) having a second
18 wedge-shaped sectional configuration with a second rounded
19 leading edge (9) also facing in said flight direction (FD)
20 and a second trailing edge (3A) facing opposite said flight
21 direction, a second journal (4) for pivoting said second
22 pivotal valve flap (3) to said aircraft body (14) at a
23 point closer to said second rounded leading edge (9) than
24 to said second trailing edge (9A), said first journal (2)

25 and said second journal (4) being displaced from each other
26 in said flight direction to form a nozzle configuration
27 between said first and second pivotable valve flaps (1, 3),
28 said nozzle configuration comprising a nozzle neck (S)
29 formed between a first facing surface (11) of said first
30 pivotable valve flap (1) and a second facing surface (15)
31 of said second pivotable valve flap (3), said facing
32 surfaces (11, 15) facing each other along an overlap area
33 (11A, 15A) for maintaining said nozzle configuration within
34 a given flap motion control range, a nozzle inlet (6)
35 converging toward said nozzle neck (S), said second facing
36 surface (15) of said second valve flap (3) comprising an
37 inwardly facing surface portion (15B) opposite said rounded
38 leading edge (8) of said first valve flap (1), said
39 inwardly facing surface portion (15B) and said rounded
40 leading edge (8) forming an air inlet funnel into said
41 nozzle inlet (6), a nozzle exit (7) diverging away from
42 said nozzle neck (S) along said overlap area (11A, 15A),
43 said converging nozzle inlet (6) and said diverging nozzle
44 exit (7) together forming a sufficient nozzle length in an
45 air flow direction (AFD) for reducing vortex and air flow
46 separation in all controllable flap positions in which said
47 nozzle configuration is maintained at sonic and supersonic
48 air discharge speeds.

- 1 17. (New) The combination of claim 16, wherein said first and
2 second wedge-shaped sectional configurations of said first
3 and second valve flaps (1, 3) are so positioned by tilting

about said first and second journals (2, 4) that said nozzle neck (S) is maintained open in response to a ratio of said external pressure (P_a) to said internal pressure (P_i) (P_a/P_i) being smaller than or equal to a critical pressure ratio ($(P_a/P_i)_{crit}$) of said internal and external pressures ($P_a/P_i \leq (P_a/P_i)_{crit}$).

18. (New) The combination of claim 17, wherein said critical pressure ratio $(P_a/P_i)_{crit}$ is at least 0.527 for accelerating air in said nozzle inlet (6) at least to a sonic air discharge speed.

19. (New) The combination of claim 16, wherein said first journal (2) and said second journal (4) are so positioned and spaced relative to each other, that a cross-sectional flow area of said nozzle neck (S) is increasable, decreasable and closeable by a respective tilting motion of at least one pivotable valve flap of said first and second pivotable valve flaps about a respective journal of said first and second journals (2, 3).

20. (New) The combination of claim 16, wherein said nozzle neck (S) is positioned where a portion (11A) of said first facing surface (11) of said first valve flap (1) merges into said curved sectional configuration of said first leading edge (8) of said first valve flap (1).

1 **21.** (New) The combination of claim 16, wherein said first and
2 second facing surfaces (11, 15) of said first and second
3 valve flaps (1, 3) are flat and plane and form said nozzle
4 inlet (6), said nozzle exit (7) and said nozzle neck (S).

1 **22.** (New) The combination of claim 16, wherein said first and
2 second facing surfaces (11', 15') of said first and second
3 valve flaps (1, 3) are concavely curved around said air
4 flow direction (AFD) to form said nozzle inlet (6) and said
5 nozzle exit (7), except said nozzle neck (S).

1 **23.** (New) The combination of claim 16, wherein said first valve
2 flap (1) and said second valve flap (3) comprise surface
3 portions (11B, 16) facing outwardly relative to said
4 aircraft body, said outwardly facing surface portions (11B,
5 16) each comprising an aerodynamic surface merging into an
6 outer surface configuration of said aircraft body.

1 **24.** (New) The combination of claim 16, wherein said rounded
2 sectional configuration of said first leading edge (8) of
3 said first valve flap (1) comprises a semicircular
4 curvature.

1 **25.** (New) The combination of claim 16, wherein said nozzle
2 inlet (6) is formed by said rounded sectional configuration
3 of said first leading edge (8) of said first valve flap (1)
4 and by a portion (15B) of said second facing surface (15)
5 of said second valve flap (2).

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1 **26.** (New) The combination of claim 16, wherein said first valve
2 flap (1) is an inner valve flap relative to said aircraft
3 body (14) and wherein said second valve flap (2) is an
4 outer valve flap relative to said aircraft body (14), said
5 first facing surface (11) comprising a first surface
6 portion (11A) along said overlap area and a second surface
7 portion (11B) facing outwardly outside said overlap area,
8 said second surface portion (11B) forming a flow guide for
9 air flowing out of said nozzle exit (7), said second facing
10 surface (15) comprising a first surface portion (15A) along
11 said overlap area and a second surface portion (15B) facing
12 inwardly outside said overlap area, said second surface
13 portion (15B) forming a flow guide for internal air (5)
14 flowing into said nozzle inlet (6).

1 **27.** (New) The combination of claim 26, wherein said inwardly
2 facing surface portion (15A) of said second facing surface
3 (15) and said second surface portion (15B) of said second
4 facing surface (15) comprise together an uninterrupted flat
5 and plane air guide surface upstream of said nozzle inlet
6 (6), along the nozzle inlet (6), at said nozzle neck (S)
7 and downstream of said nozzle neck (S) along said nozzle
8 exit (7).

1 **28.** (New) The combination of claim 16, wherein said first
2 pivotal valve flap (1) and said second pivotal valve

3 flap (3) comprise an identical cross-sectional
4 configuration.

1 29. (New) The combination of claim 28, wherein said first
2 journal (2) is positioned in said first pivotable valve
3 flap (1) next to said first trailing edge (8A), and wherein
4 said second journal (4) is positioned in said second
5 pivotable valve flap (3) next to said second rounded
6 leading edge (9), and wherein said first rounded leading
7 edge (8) and said second rounded leading edge (9) are
8 facing in said flight direction (FD).

1 30. (New) An air discharge valve for controlling an air
2 discharge from an aircraft body, said air discharge valve
3 comprising two valve flaps (1, 3) having identical
4 cross-sectional configurations in the form of a wedge-shape
5 with a rounded leading edge (8, 9) facing in a flight
6 direction (FD) and with a trailing edge (8A, 9A) facing in
7 an air discharge direction (AFD), said two valve flaps
8 comprising an inner valve flap (1) including a pivot (2)
9 for pivotably securing said inner valve flap (1) near its
10 trailing edge (8A) to said aircraft body and an outer valve
11 flap (3) including a pivot (4) for pivotally securing said
12 outer valve flap (3) near its leading edge (9) to said
13 aircraft body, said two valve flaps having facing surfaces
14 (11, 15A) overlapping each other in a discharge air flow
15 direction (AFD) for maintaining a nozzle configuration
16 within a given flap motion control range.

1 31. (New) The air discharge valve of claim 30, wherein each
2 said rounded leading edge (8, 9) has an arc portion of a
3 circular cross-section.

[RESPONSE CONTINUES ON NEXT PAGE]

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